

**REMARKS**

Claims 1-28 were originally presented for examination and are currently pending. Claims 1, 12, and 21 are in independent form.

Claims 1-4, 12, 13, 21, and 22 have been amended by way of the present Response. No new matter is introduced.

Favorable reconsideration of the present patent application as currently constituted is respectfully requested.

**Regarding the Claim Rejections - 35 U.S.C. §102(b)**

In the pending Office Action, claims 1, 2, 12, 13, 21, and 22 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,758,061 to Plum (hereinafter the *Plum* reference). The following comments were provided with respect to these §102 rejections:

With respect to claim 1, Plum discloses a method of modifying a source code portion associated with a computer program (see column 5, line 39-44, which shows instrumenting the source code of a computer program), comprising the steps of:

(a) scanning said source code portion using a parser to recognize at least one select syntax structure therein, said parser having a predetermined code modification portion (see column 7, lines 1-9, which shows a parser for parsing the source code and analyzing its syntax, and column 9, lines 33-40, which further shows identifying structures in the code); and  
(b) inserting an instrumentation code portion into said source code portion at a location associated with said select syntax structure based on said predetermined code modification portion of said parser

(see column 7, lines 15-21, which shows inserting instrumentation code at predetermined location, and lines 26-36, which further shows that such locations are associated with certain language structures).

With respect to claim 12, the recited system is analogous to the method recited in claim 1. See the explanation for claim 1 set forth above. Note that Plum further discloses such a system (see column 5, lines 12-24).

With respect to claim 21, the recited computer-readable medium is analogous to the method recited in claim 1. See the explanation for claim 1 set forth above. Note that Plum further discloses such a computer-readable medium (see column 5, lines 12-24).

Applicant respectfully submits that pending \$102 rejections have been overcome or otherwise rendered moot by way of the present amendments as set forth above. The present invention, as defined by the amended base claims 1, 12 and 21, is directed to a system, method and computer-readable medium for automatically and selectively modifying the source code of a computer program. A parser is provided for scanning the source code portion to recognize select syntax structures of the source code. One or more predetermined code modification portions are included in the parser, each being operable to specify a corresponding instrumentation code portion. Accordingly, an instrumentation code portion is inserted into the source code portion at a location associated with a particular select syntax structure therein, the instrumentation code portion being

specified responsive to a corresponding predetermined code modification portion provided in the parser.

Applicant respectfully submits that these limitations are not anticipated or even suggested by the *Plum* reference. In *Plum*, at column 7, lines 1-9, a general description of a parser is provided. Further, the parser block 202 of *Plum* is merely operable to determine insertion points for inserting instrument code 106. When an insertion point is found, the instrumenter 200 inserts instrument code 106 at that position in the computer program. Otherwise, instrumenter 200 continues parsing until it reaches the end of the program. See column 7, lines 15-21; see also FIG. 3. Applicant respectfully contends that these teachings of the *Plum* reference as applied in the outstanding Office Action do not teach or allude to a parser having one or more predetermined code modification portions therein, each being operable to specify a corresponding, and possibly variable, instrumentation code portion, as currently claimed. In contrast, the instrumenter 200 of the *Plum* reference merely inserts a statically-associated instrument code at an insertion point. As set forth in further detail at column 7, lines 45 et seq. of the *Plum* reference, once an insertion point has been located, the instrumenter 200 inserts a particular "case" instrument code at the insertion point (assuming it is the first insertion point in the program). The parser process 202 is then used to find the

next "chunk" of the program 102 and the overall process 204 completes when done (decision block 204). Once a chunk is located, the block 210 determines whether the chunk type is a "block" chunk or a "branch" chunk. As explained further, branch chunks are analogous to the decision branches 152 shown in FIGS. 4A and 4B, and result in "test" type instrument code being inserted into the beginning of each branch path they define. On the other hand, a "block" type chunk is analogous to the process block 150E shown in FIGS. 4A and 4B, and results in "block" instrument code being inserted. See column 7, lines 56-65; see also column 9, lines 33-40 (defining a "chunk" as referring to each portion of the source program which can be reached by either a function call or some form of a conditional test).

Based on the foregoing discussion, Applicant respectfully submits that the *Plum* reference neither discloses nor suggests Applicant's invention as recited in the currently-amended base claims 1, 12 and 21. Dependent claims 2, 13 and 22 depend from these three base claims, respectively, and introduce additional limitations therein. Accordingly, these dependent claims of the present patent application are also allowable over the *Plum* reference.

**Regarding the Claim Rejections - 35 U.S.C. §103(a)**

In the pending Office Action, the remaining claims stand rejected under 35 U.S.C. §103(a) on the basis of several combinations of art. Claims 3, 4, 7, 9, 10, 14, 16, 18, 19, 23, 26, and 28 are rejected under 35 U.S.C. §103(a) as being unpatentable over the *Plum* reference, as applied to claims 2, 13, and 22 above, respectively, in view of U.S. Patent No. 6,311,327 to O'Brien et al. (hereinafter the *O'Brien* reference). Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over the *Plum* reference, as applied to claim 2 above, in view of U.S. Patent No. 5,909,578 to Buzbee (hereinafter the *Buzbee* reference). Claims 6, 8, 15, 17, 25, and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over the *Plum* reference, as applied to claims 2, 13, and 22 above, respectively, in view of U.S. Patent No. 5,450,586 to Kuzara et al. (hereinafter the *Kuzara* reference). Finally, claims 11, 20, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over the *Plum* reference, as applied to claims 2, 13, and 22 above, respectively, in view of U.S. Patent No. 6,327,699 to Larus et al. (hereinafter the *Larus* reference).

In response, Applicant respectfully submits that these pending §103 rejections have been overcome or otherwise rendered moot by way of the present amendments. As set forth in detail

hereinabove, the base claims 1, 12, and 21 are neither taught nor suggested by the primary reference, i.e., the *Plum* reference. The critical deficiency of the *Plum* reference as applied against the currently claimed invention is not cured, however, by relying on the various secondary references, either alone or in any combination. It is well known that to establish obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the combined references must teach or suggest all the claim limitations. See MPEP §2143. Applicant respectfully contends that there is no suggestion or motivation in any of the applied references to combine the teachings therein so as to achieve the claimed invention directed to a system, method and computer-readable medium for automatically and selectively modifying the source code of a computer program, wherein one or more predetermined code modification portions are included in a parser, each being operable to specify a corresponding instrumentation code portion for insertion into the computer program's source code at selected locations. As set forth in detail hereinabove, although the *Plum* reference is concerned with providing instrumented code by applying a parser, it does not suggest or provide motivation for including predetermined code modification portions therein for

specifying, in a dynamic manner, a variety of corresponding instrumentation code portions. The *O'Brien* reference is directed to a software analysis system for capturing tags generated by tag statements in instrumented source code. The *Buzbee* reference is concerned with optimizing compilers where a method and system are provided for burst profiling a software application. The *Kuzara* reference discloses a system for inserting code markers for observing indications of the occurrence of an event in the execution of embedded software. The *Larus* reference teaches a path profiling technique wherein a program is instrumented to record acyclic paths during execution of the program. Applicant respectfully submits that even if the teachings of the applied references were to be combined, the combined references fail to teach or suggest all the limitations of the claimed invention as currently constituted. Accordingly, it is believed that the various dependent claims of the present patent application are allowable over the entire art of record.

**SUMMARY AND CONCLUSION**

In view of the fact that none of the art of the record, whether considered alone or in combination discloses, anticipates or suggests the present invention, as now defined by the independent claims, and in further view of the above amendments and remarks, reconsideration of the Action and allowance of the present invention are respectfully requested and are believed to be appropriate.

Respectfully submitted,

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